

REMARKS

This application has been reviewed in light of the Office Action dated April 15, 2004. Claims 1-11 remain pending. Claims 1 and 7 are in independent form. Favorable reconsideration is requested.

The Abstract has been amended in the manner required in the Office Action. As such, the Office Action's objection to the disclosure is believed to be overcome.

The drawings were objected to because no label appears in block 1. The Office Action suggested inserting "D/A" in block 1 of Figs. 1-3. Attached hereto is a proposed replacement sheet in which block 1 has been labeled "D/A" in Figs. 1-3, as suggested in the Office Action. Entry of the replacement drawing is respectfully requested, as is withdrawal of the objection to the drawings.

Claims 1-3, 7, 10, and 11 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,215,430 (*Smith et al.*). Claims 8 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Smith et al.* These rejections are respectfully traversed for the reasons given below.

According to an aspect of the present invention to which the independent claims relate, a first, digital signal is mixed with a second signal, and the digital signal is converted into an analog current signal by means of a digital-to-analog converter provided with a current output. The analog current signal is supplied to a current input of a mixer by means of which it is mixed with the second signal.

In contradistinction to the present invention, *Smith et al.* is not seen to teach or suggest a digital-to-analog converter with a current output and a mixer with a current input. That is, no digital signal is understood to be converted into an analog current signal, in *Smith et al.* Instead, in *Smith et al.* the output signal of the digital-to-analog converter is referred to merely as an "analog signal output" (see, e.g., col. 4, line 54, and col. 5, lines 4-5) or as an "output" (see, e.g., col. 3, line 60), but nowhere in that reference is there seen to

be a teaching or suggestion that the output signal of the digital-to-analog converter could be a current signal. Indeed, at col. 1, lines 55-56, *Smith et al.* explicitly states that the digital-to-analog converter "converts digital codes into a signal having discrete analog voltages." This is understood to mean that the output signal of the digital-to-analog converter is a voltage signal, rather than a current signal.

Moreover, at col. 4, lines 55-57, *Smith et al.* states that DAC 66 may be implemented with a standard commercially available integrated circuit, i.e., a discrete electronic component, such as a "DAC600" supplied by Burr-Brown, of Tucson, Arizona. Such discrete electronic components are typically provided with voltage outputs so as to be compatible with the voltage signaling conventionally used between discrete electronic components of circuit arrangements. While such a DAC may operate internally on a current basis, in such a case a mechanism having a capability for internally converting current signals to voltage signals would need to be provided. This can be further understood from the data sheet (entitled "12-Bit 256MHz Monolithic Digital-To-Analog Converter") of the "DAC600" integrated circuit of Burr-Brown, a copy of which data sheet is submitted herewith along with an Information Disclosure Statement citing it. As is apparent from the figure on the first page of the data sheet and Fig. 1 on page 9 of the data sheet, the digital-to-analog converter comprises internal switched current sources. Owing to the output impedance of the digital-to-analog converter, the current is converted into a voltage. This means that the specific DAC 66 used in the arrangement of *Smith et al.* (which apparently may be implemented in accordance with the DAC600 of Burr-Brown) has a voltage output -- not a current output, and therefore a voltage-to-current conversion is required in *Smith et al.* prior to the actual mixing stage. Accordingly, the arrangement described in *Smith et al.* functions in a similar way as the related background art described at pages 1-2 of the present application, and also suffers from the same problems as does that art.

Applicants respectfully submit that even if *Smith et al.* be deemed to employ a DAC 66 having a voltage output, nothing has been found, or pointed out, in *Smith et al.* that would teach or suggest a digital-to-analog converter with a current output and a mixer with a current input, used in the context of the method and apparatus set forth in Claims 1 and 7, respectively. Accordingly, Claims 1 and 7 are each deemed to be clearly patentable over *Smith et al.*

A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as a reference against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

**REQUEST FOR ACKNOWLEDGMENT OF CLAIM TO PRIORITY  
AND RECEIPT OF FOREIGN PRIORITY DOCUMENT**

The Office Action Summary attached to the Office Action did not acknowledge Applicants' claim to priority of the receipt by the Patent and Trademark Office of the certified copy of the foreign priority document submitted in this application.

Applicants filed a paper entitled Claim to Priority in the Patent and Trademark Office on November 19, 2003 in the present application along with a certified copy of the following foreign priority document:

DE 102 50 632.9, filed October 30, 2002.

A copy of the Claim to Priority is enclosed herewith, as is a copy of the cover page of each foreign priority document. Also enclosed is a copy of the postcard bearing the Patent and Trademark Office's official stamp of receipt evidencing the receipt of those items by the Office.

In view foregoing, it is respectfully requested that the Patent and Trademark Office acknowledge Applicants' claim to priority and the Office's receipt of the foreign priority document in this application.

REQUEST FOR CONSIDERATION OF PREVIOUSLY CITED ART

Applicants respectfully request that the reference cited in the Information Disclosure Statement filed on November 13, 2003 be considered by the Examiner, if it has not been considered already. For the Examiner's convenience, enclosed is a copy of the Information Disclosure Statement, a copy of the reference cited therein, and a copy of the return receipt postcard stamped by the Patent and Trademark Office, evidencing that the Information Disclosure Statement was filed in the Patent and Trademark Office on November 13, 2003. To date, Applicants have not received confirmation that the reference cited in the Information Disclosure Statement has been considered and made of record by the Examiner. Accordingly, issuance of the Form PTO-1449 (which was filed with the Information Disclosure Statement) bearing the Examiner's initials to confirm that the reference has been considered and made of record, is respectfully requested.

CONCLUSION

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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